Notice of Allowability	Application No.	Applicant(s)	
	09/765,639	MAEDA, MASAHIRO	
	Examiner	Art Unit	
	Herng-der Day	2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *Amendment received 5/10/06*.

2. ☒ The allowed claim(s) is/are *1-2, 4, 7, 10, and 12-20, now renumbered as 1-14*.

3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☒ All b) ☐ Some* c) ☐ None of the:
      1. ☒ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *20060621* .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

KAMINI SHAH
SUPERVISORY PATENT EXAMINER

DETAILED ACTION

1. This communication is in response to Applicant's Amendment to Office Action dated November 10, 2005, mailed May 10, 2006.

1-1. Claims 1, 2, 4, 7, 10, and 12-20 have been examined and allowed.

EXAMINER'S AMENDMENT

2. An Examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

3. Authorization for this Examiner's amendment was given in a telephone interview with Mr. Andrew J. Taska (Reg. No. 54,666) on June 21, 2006.

4. The specification has been amended as follows:

4-1. At page 28, lines 10-11, replaces "REFERENCE PLANE DEFINING MEANS 284" as "REFERENCE SEGMENT CREATING MEANS 284".

4-2. At page 36, line 12, replaces "CONDITION INPUT MEANS 287a" as "CONDITION INPUT MEANS 288a".

4-3. At page 43, line 26, replaces "REFLECTING SURFACE DETERMINING STEP 109" as "REFLECTING SURFACE DETERMINING STEP 110".

5. The application has been amended as follows:

5-1. Replace claim 1 as follows:

1. (Currently Amended): A method of evaluating the reflection performance of a reflecting mirror designed for a vehicle lamp, comprising:

a) entering design information and position information, the design information representing a plurality of reflecting basic surfaces which constitute the reflecting mirror, and the position information containing a light source position in the vehicle lamp; and

b) displaying attribute information concerning an attribute indicative of whether imaginary light from the light source position can effectively reach each of a first plurality of areas into which a first reflecting ~~basi' sur_ e~~basic surface, selected from among the plurality of reflecting basic surfaces, is divided on the basis of the design information;

wherein the plurality of reflecting basic surfaces are discrete surfaces,

d) generating divided area information so as to be associated with the design information, the divided area information being indicative of the first plurality of areas of the first reflecting basic surface selected from among the plurality of reflecting basic surfaces and divided into the first plurality of areas on the basis of the design information;

e) making a determination, on the basis of the divided area information and the design information, as to whether the imaginary light from the light source position can effectively reach each of the first plurality of areas of the first reflecting basic surface; and

f) generating the attribute information for each of the first plurality of areas on the basis of the determination, the attribute information being associated with at least one of the design information and the divided area information;

wherein (b) further includes: providing an evaluation point within each of the first plurality of areas;

generating a straight line, the straight line connecting the evaluation point to the light source position; and

determining whether the straight line intersects another reflecting basic surface other than the first reflecting basic surface which is associated with the first plurality of areas.

5-2. Claim 3 canceled.

5-3. Replace claim 4 as follows:

4. (Currently Amended): The method according to claim ~~3~~1, further comprising:

g) applying (d) to a second reflecting basic surface sequentially selected from the remaining reflecting basic surfaces to update the divided area information, the divided area information being associated with the design information;

h) applying (e) and (f) to the second reflecting basic surface sequentially selected from the remaining reflecting basic surfaces to update the attribute information, the attribute

information being associated with at least one of the design information and the divided area information; and

i) displaying the updated attribute information concerning the attribute with respect to each of the plurality of areas into which each of the remaining reflecting basic surfaces is divided on the basis of the design information.

5-4. Claim 5 canceled.

5-5. Claim 6 canceled.

5-6. Replace claim 7 as follows:

7. (Currently Amended): The evaluation system according to claim ~~6~~15, further comprising:

second transmitting means for transmitting, to the display device, attribute information concerning an attribute indicative of whether imaginary light from the light source position can effectively reach each of a second plurality of areas into which each of the remaining reflecting basic surfaces is divided on the basis of the design information.

5-7. Claim 8 canceled.

5-8. Claim 9 canceled.

5-9. Replace claim 10 as follows:

10. (Currently Amended): The storage medium according to claim ~~9~~18, wherein the program further comprises:

a second process for displaying attribute information concerning an attribute indicative of whether imaginary light from the light source position can effectively reach each of a second plurality of areas into which each of the remaining reflecting basic surfaces is divided on the basis of the design information.

5-10. Claim 11 canceled.

5-11. Replace claim 12 as follows:

12. (Currently Amended): The storage medium according to claim ~~9~~18, wherein the program further includes:

a division process provided so as to generate divided area information, the divided area information including area data on a second plurality of areas; into which each of the reflecting basic surfaces is divided on the basis of the design information, the divided area information being associated with the design information;

a determination process provided so as to make a determination, on the basis of the divided area information and the design information, as to whether imaginary light from the light source position can effectively reach of the second plurality of areas of each of the reflecting basic surfaces;

an attribute process provided so as to generate, on the basis of the determination, the attribute information for each of the second plurality of areas of each reflecting basic surface, the attribute information being associated with at least one of the design information and the divided area information; and

another display process provided so as to display the attribute information for each of the second plurality of areas into which each of the remaining reflecting basic surfaces is divided on the basis of the design information.

5-12. Replace claim 15 as follows:

15. (Currently Amended): An evaluation system for evaluating reflection performance of a reflecting mirror designed for a vehicle lamp, comprising:

a memory;

a display device which displays received information;

input means for entering design information and position information of a light source position in the vehicle lamp to store the entered information in the memory, the design information being indicative of a plurality of reflecting basic surfaces which constitute the reflecting mirror; and

first transmitting means for transmitting, to the display device, attribute information concerning an attribute indicative of whether imaginary light from the light source position can effectively reach each of a first plurality of areas into which a first reflecting basic surface, selected from among the reflecting basic surfaces, is divided on the basis of the design information;

wherein the plurality of reflecting basic surfaces are discrete surfaces;

first division means for generating divided area information so as to be associated with the design information, the divided area information including area data on the first plurality of areas of the first reflecting basic surface selected from among the reflecting basic surfaces and is divided into the first plurality of areas on the basis of the design information;

first determination means for making a determination, on the basis of the divided area information and the design information, as to whether the imaginary light from the light source position can effectively reach each of the first plurality of areas of the first reflecting basic surface;

first attribute means for generating, on the basis of the determination, the attribute information for each of the first plurality of areas, the attribute information being associated with at least one of the design information and the divided area information; and

~~The evaluation system according to claim 8,~~ wherein the first determination means makes the determination of whether the imaginary light from the light source position can effectively reach each of the first plurality of areas by:

providing an evaluation point within each of the first plurality of areas;

generating a straight line, the straight line connecting the evaluation point to the light source position; and

determining whether the straight line intersects another reflecting basic surface other than the first reflecting basic surface which is associated with the first plurality of areas.

5-13. Replace claim 16 as follows:

16. (Currently Amended): The evaluation system according to claim ~~6~~15, wherein the first plurality of areas into which a first reflecting basic surface is divided are equally sized and repetitively arranged.

5-14. Replace claim 17 as follows:

17. (Currently Amended): The evaluation system according to claim ~~6~~15, wherein the plurality of reflecting basic surfaces are non-continuous.

5-15. Replace claim 18 as follows:

18. (Currently Amended): A computer-readable storage medium storing a program to be executed by a computer, the program enabling the computer to evaluate reflection performance of a reflecting mirror designed for a vehicle lamp, wherein the program includes:

an input process for entering design information and position information of a light source position in the vehicle lamp, the design information being indicative of a plurality of reflecting basic surfaces, the plurality of reflecting basic surfaces constituting the reflecting mirror; and

a first display process for displaying attribute information concerning an attribute indicative of whether imaginary light from the light source position can effectively reach each of

a first plurality of areas into which a first reflecting basic surface, selected from among the plurality of reflecting basic surfaces, is divided on the basis of the design information;

wherein the plurality of reflecting basic surfaces are discrete surfaces;

wherein the program further includes:

a first division process for generating divided area information, the divided area information including area data on the first plurality of areas of the first reflecting basic surface selected from among the reflecting basic surfaces, the divided area information being associated with the design information;

a first determination process for making a determination, on the basis of the divided area information and the design information, as to whether the imaginary light from the light source position can effectively reach each of the first plurality of areas of the first reflecting basic surface; and

a first attribute process for generating the attribute information for each of the first plurality of areas on the basis of the determination, the attribute information being associated with at least one of the design information and the divided area information;

~~The storage medium according to claim 11,~~ wherein the first determination process makes the determination as to whether the imaginary light from the light source position can effectively reach each of the first plurality of areas by:

providing an evaluation point within each of the first plurality of areas;

generating a straight line, the straight line connecting the evaluation point to the light source position; and

determining whether the straight line intersects another reflecting basic surface other than the first reflecting basic surface which is associated with the first plurality of areas.

5-16. Replace claim 19 as follows:

19. (Currently Amended): The storage medium according to claim ~~9~~18, wherein the first plurality of areas into which a first reflecting basic surface is divided are equally sized and repetitively arranged.

5-17. Replace claim 20 as follows:

20. (Currently Amended): The storage medium according to claim ~~9~~18, wherein the plurality of reflecting basic surfaces are non-continuous.

Reasons for Allowance

6. The following is an Examiner's statement of reasons for allowance:

6-1. The closest prior art of record discloses:

(1) A user's guide of segmented reflector design software (Breault Research Organization, "ReflectorCAD User's Guide").

(2) A method of forming a reflection surface of a reflection mirror of a vehicle lamp (Ishikawa et al., U.S. Patent 5,836,668).

6-2. Independent claim 1 is directed at a method of evaluating the reflection performance of a reflecting mirror designed for a vehicle lamp as shown in Fig. 3. Although designing segmented reflectors, calculating the reflector's approximate output, and forming a reflection surface of a reflection mirror of a vehicle lamp are obvious as disclosed in the prior art of record, this independent claim identifies the distinct combination of features of step e), step f), and "determining whether the straight line intersects another reflecting basic surface other than the first reflecting basic surface which is associated with the first plurality of areas", which has not been uncovered in a single teaching, nor would a modification of prior art references be obvious to one of ordinary skill in the art to yield these limitations in the context of the claim. Claim 1 is deemed allowable.

6-3. Independent claim 15 is a system claim reciting equivalent method limitations as in the allowable claim 1 and is deemed allowable for the same reason as claim 1.

6-4. Independent claim 18 is a computer-readable storage medium claim reciting equivalent method limitations as in the allowable claim 1 and is deemed allowable for the same reason as claim 1.

6-5. Dependent claims 2, 4, 7, 10, 12-14, 16, 17, 19, and 20 are allowable as they depend on the allowed independent claims.

7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

8. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Herng-der Day whose telephone number is (571) 272-3777. The Examiner can normally be reached on 9:00 - 17:30.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: (571) 272-2100.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kamini S. Shah can be reached on (571) 272-2279. The fax phone numbers for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Herng-der Day
June 21, 2006 H.D.

KAMINI SHAH
SUPERVISORY PATENT EXAMINER